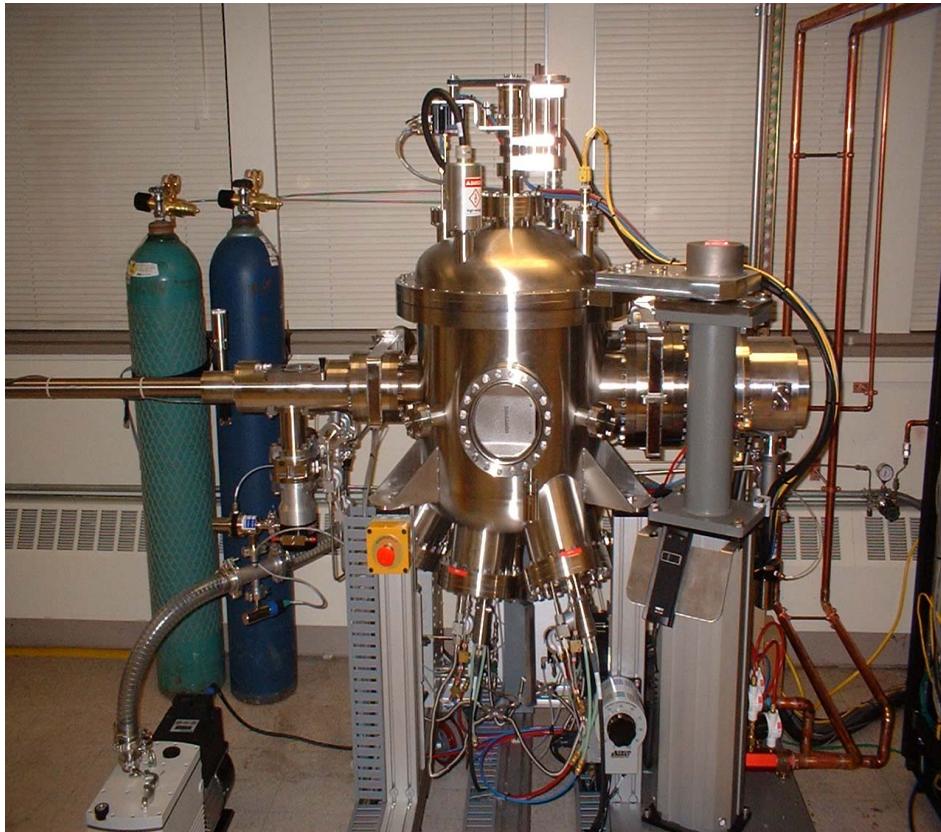


University of Minnesota

Multi-Target UHV Sputtering System

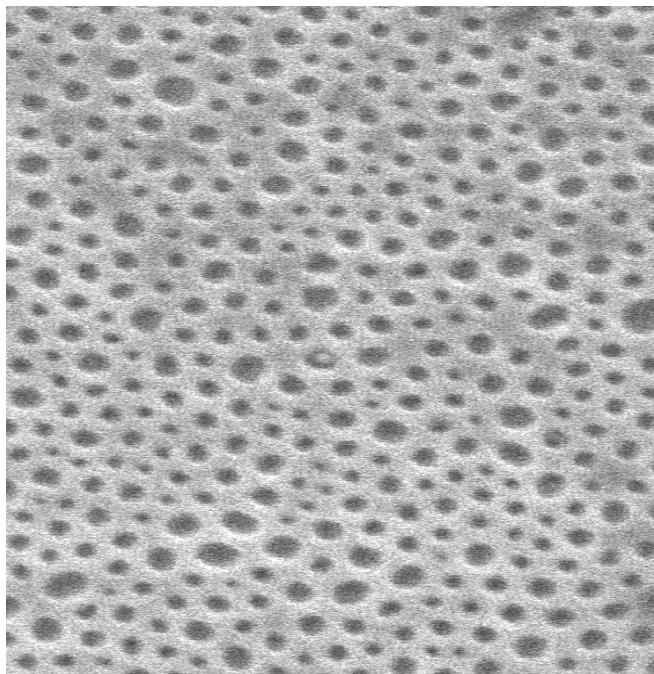


- UHV Reactive Sputtering
- $P < 6 \times 10^{-9}$ Torr
- 6 confocal sources
- $T_S > 900$ C, substrate rotation
- Ar/O₂ mass flow control
- r.f./d.c.
- O₂ annealing
- 3 source co-deposition
- HV Load lock (10^{-7} Torr)

Epitaxial metals, bilayers, superlattices and oxides

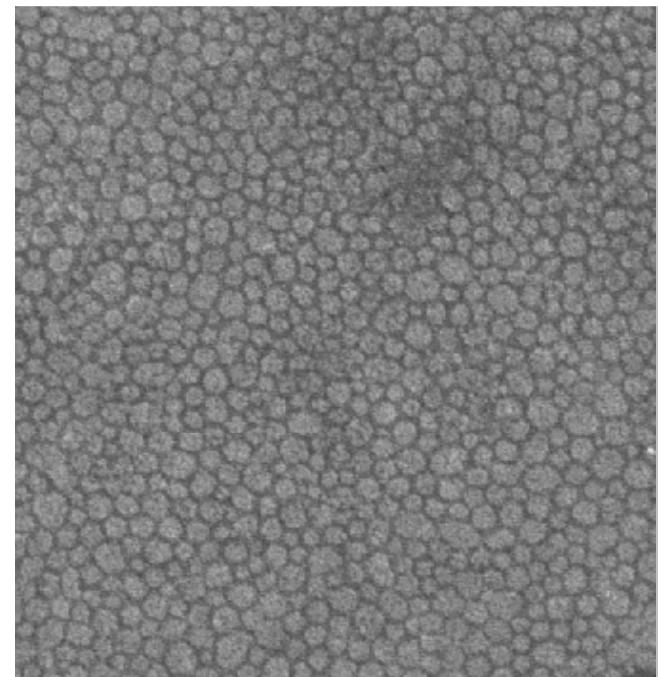
Single Crystal Magnetic Nanostructures

We use a new diblock copolymer templating technique to synthesize nanoporous masks for the deposition of large area epitaxial magnetic dot arrays:



— 100 nm

Nanoporous polystyrene masks



— 100 nm

Single crystal magnetic dot arrays
 10^{12} dots over 10 cm^2